Life Cycle

- The whitefly spends its winters in weeds and ornamental plants, migrating to crops and gardens in spring and summer. Once temperatures warm up in the summer, populations can build rapidly with the highest populations probably occurring in late summer.

- Whiteflies lay their tiny eggs on the undersides of leaves. The first stage has legs and antennae, but these are lost after the first molt and the flattened, oval-shaped larvae stay fixed at one feeding site. The last part of the fourth stage immature is the pupa and it does not feed. Adults emerge from the pupae through a T-shapped slit and soon mate and reproduce. There are many generations a year.

Garden Management

- Destroy heavily infested plant parts and alternate hosts. If leaves or plants are heavily infested, prune out infested parts and destroy them before the whiteflies can spread. If infestations become very serious, you may wish to replace heavily infested plants such as lantana, roses, jasmine, honeysuckle and petunia with other plants that are not attacked by the whitefly. Look out for infested weeds and be sure to destroy these as well; pigweed, ground cherry and field bindweed are known to harbor the silverleaf whitefly.

- Destroy unwanted vegetables at harvest.
- Check transplant plants carefully.
- Caution using Insecticides.
- Biological control may be best.
- Adjust planting times.

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Fact Sheet

Whiteflies

Plants affected by the whitefly are, but not limited to - squash, tomatoes, pumpkins, melons, peppers, cucumbers, eggplant, broccoli, cauliflower, cabbage, okra, carrots, broadleaf trees, shrubs, ficus, poinsettia, lantana, roses, jasmine, honeysuckle and petunia, cotton, hibiscus, beans, soybean, peanuts, gerber daisies and ornamental plants.

Agricultural Damage

Whiteflies have become one of the most serious crop protection problems. Losses are estimated in the hundreds of millions of dollars. While several species of whitefly cause crop losses through direct feeding, a species complex, or group of whiteflies in the genus *Bemisia* are important in the transmission of plant diseases, *Bemisia tabaci* and *B. argentifolii,* transmit African cassava mosaic, bean golden mosaic, bean dwarf mosaic, bean calico mosaic, tomato yellow leaf-curl, tomatoes mottle and other Begomoviruses, in the Family: Geminiviridae. The world-wide spread of emerging biotypes, such as *B. tabaci* biotype B, also known as, "B. argentifolii" and new biotype Q, continue to cause severe crop losses which will likely continue to increase, resulting in higher pesticide use on many crops (tomatoes, beans, cassava, cotton, cucurbits, potatoes, sweet potatoes).

Feeding damage can cause economic losses, it is the ability of whiteflies to transmit or spread viruses that has had the widest impact on global food production. Whitefiles can seriously injure plants by sucking juices from them causing wilting, stunting, or even death. Whiteflies also secrete a sticky substance called honeydew. This material can coat any object, leaves, fruit, windshields, concrete walks, etc. on which it falls. In addition, several molds, collectively called "sooty molds" because of their black appearance, can grow on this honeydew resulting in an unsightly, sticky mess. Sooty mold can make fruit unmarketable and can block sunlight from reaching the leaf surface thus reducing photosynthesis.

A new species of ornamental pest has invaded the southern states causing havoc to one of the most prominently utilized landscape materials in the surrounding area. The "Fig Whitefly" or "Ficus Whitefly" resides on the underneath of ficus leaves draining the plant of its nutrients until its certain demise.

Types of Whiteflies

Silverleaf Whitefly - Found throughout much of the southern and southwestern United States. Adults are approximately 1/16 inch (1.5mm) long and readily fly when disturbed. They have white, wax covered wings that are held tent like above the abdomen. The wings, which have no markings on them, do not quite touch each other and the yellowish abdomen is visible through the gap between the wings. The eggs are laid randomly on the under side of the leaf. The nymphs appear as small, slightly raised, oval insects that are white to yellowish in color. Silverleaf whiteflies, have very little wax associated with their colonies. They have an extensive host range and attack over 500 plant species.

Sweet potato Whitely - Appears identical to the silverleaf whitefly and the two can only be distinguished from each other by a whitefly taxonomist. Their host range is similar to that of the silverleaf whitefly.

Ash Whitefly - This whitefly produces large quantities of wax. The "pupa" has a very thick, waxy coat over the middle of the back as well as long fringes of wax along the edges. The adults have plain white wings with no markings and their bodies are covered with lots of wax. Broadleaf trees and shrubs serve as their main hosts.

Bandedwinged Whitefly - Adults can be recognized by the two irregular zigzag smoky-gray lines transverse each of the front pair of wings. No bands are present on the hind wings. Eggs are usually laid randomly but occasionally may be deposited in neat circles. The nymphs have a marginal fringe of translucent wax filaments and the dorsal medial area of the skin turns brown. This dark area on the top of the nymph readily distinguishes the bandedwinged whitefly from the greenhouse whitefly. Hosts include many common weeds and ornamentals.

Iris Whitefly - Adults are slightly larger than the previously described whiteflies. The body and wings are quite waxy and the wings are held flat over the body. The wings are more rounded at the tip than are those of some other species and they have a dark spot in the center of each back wing. The eggs are laid in distinctive circles and large amounts of wax can be found around both the eggs and the nymphs. Host include: iris, gladiolus, other landscape plants, many vegetables and cotton.

Giant Whitefly - Native of Mexico and has only recently (1992) been found in the United States. The adults may be up to 3/16 inch (4mm) long and it is one of the largest whiteflies found in North America. The wings overlap across the back and are mottled with black markings. Giant whitefly produces copious amounts of wax. The adults deposit spirals of wax as they walk on the leaves and the eggs are often laid amongst these waxy deposits. The nymphs produce long, hairlike filaments of wax up to 2 inches (50 mm) long. A large number of ornamental and agricultural plants serve as hosts.

Defoliation

The infestations of the "Fig Whitefly" or "Ficus Whitefly" are so populous that defoliation occurs rapidly with little signs of the previous warning. In the event that these whiteflies are not treated immediately homeowners and communities can be assured that the infestation will continue to spread to new plants as the others lose their aesthetic appeal and will soon die.

First symptoms can be noticed as a chlorotic streaking occurs in the leaves. In severe situations defoliation occurs and if allowed to continue death will soon follow. Ficus hedges can easily be tested for these infestations by running their hands through the leaves and observing the small flies swarming about. About 1/4 inch in size theses flies are hardly noticeable and may look like small pieces of white debris floating about when interrupted. During their resting periods Ficus Whiteflies can be located on the underneath of leaves alone with their eggs.